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POTENTILLA CANDIDA RYDBERG.



POTENTILLA ATRORUBENS RYDBERG.

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Notes on *Potentilla*.—VI.

By P. A. RYDBERG.

(PLATES 287, 288.)

The *Hippianae* constitute a group somewhat related to the *Multijugae*. They are, however, as a rule stouter than the members of that group, and the leaves are more or less white or grayish hairy, generally densely silky, villous or tomentose. The group contains the following species :

POTENTILLA BREWERI S. Wats. Proc. Am. Acad. 7 : 555. 1873.

Potentilla Breweri much resembles *P. Plattensis*. It has the large stipules characteristic of that species and also essentially the same flowers. The leaflets are, however, broader and less divided and densely silky-villous. In the typical form the cyme is rather dense and the flowers larger. It grows in California.

POTENTILLA BREWERI EXPANSA S. Wats. Bot. Cal. 1 : 179. 1876.

Potentilla Plattensis leucophylla Greene, Erythea, 1 : 4. 1893.

This resembles *P. Plattensis* still more, having the open cyme of that species. It grows also in Nevada and is apparently more common than the species.

POTENTILLA CRINITA A. Gray, Mem. Am. Acad. 1849 : 41. 1849.

This is of similar habit but easily distinguished by its conduplicate, appressed-silky cuneate leaflets, which are slightly crenate at the apex. *P. crinita* grows on the dry plains of Arizona, New Mexico, southern Utah and Colorado.

POTENTILLA EFFUSA Dougl.; Lehm. Stirp. Pug. 2: 8. 1830.

The pubescence is grayish or whitish tomentose, not at all silky; the branches are rather divergent and the bractlets much smaller than the acuminate sepals. It grows on the dry plains from New Mexico to Montana, Assiniboia and Minnesota (?).

Potentilla effusa gossypina Nutt.; Torr & Gray, Fl. N. Am. 1: 437. 1840, is still unknown. Dr. Hooker, in London Jour. Bot. 6: 219, states that the plant collected by Geyer (no. 637) was labelled by Nuttall *P. gossypina*. These specimens Dr. Hooker identified as *P. arachnoidea* Douglas, which is *P. Pennsylvanica arachnoidea* Lehm.

POTENTILLA FILICAULIS (Nutt.).

Potentilla effusa filicaulis Nutt.; Torr. & Gray, Fl. N. Am. 1: 437. 1840.

This is known from only two fragmentary specimens, one, the original of Nuttall, in the Torrey Herbarium at Columbia University, the other collected by Dr. J. M. Coulter, in 1872, near Fort Hale, and preserved in Dr. Porter's private collection. The stem is very slender, filiform. As the pubescence is somewhat silky, it is probably more related to the following species:*

POTENTILLA HIPPIANA Lehm. Stirp. Pug. 2: 7. 1830.

Potentilla leucophylla Torr. Ann. Lyc. Nat. Hist. N. Y. 2: 197. 1827. Not Pallas.

Potentilla leneophylla Eat. Man. Ed. 5, 344. 1829.

The name used by Eaton seems to have been overlooked altogether. It may be claimed that the name given was only a misprint for *P. leucophylla*, the original name, which, however, is antedated by *P. leucophylla* Pallas, a synonym of *P. nivea*. The name *P. leneophylla*, which means woolly-leaved, a very appropriate name, is not only found in the fifth edition of Eaton's Manual, but also in the sixth and seventh editions and in Eaton & Wright's North

* Since the above was written I have found a sheet of good specimens in a collection from the Iowa Agricultural College at Ames. These specimens show that the plant is more nearly related to *P. Hippiana* than to *P. effusa*, having practically the same pubescence and sepals as that species, but is much smaller. It has often subdigitate leaves, and holds about the same relation to *P. Hippiana* as *P. saximontana* and *P. minutifolia* do to *P. pulcherrima*, and may better be referred to the *Subjugae* group.

American Botany. Watson in his Bibliographical Index has no reference to any of the editions of Eaton's Manual and gives Eaton & Wright as a reference under *P. leucophylla*, which does not appear there. The Kew Index has also omitted *P. leucophylla*, which should take the place of *P. Hippiana*, being a year older, if it were not for the fact that it very likely is to be explained as a misprint. *P. Hippiana* is sometimes very hard to distinguish from *P. effusa*, and the two seem to grade into each other. *P. Hippiana* is, however, as a rule larger, silky as well as tomentose; the branches are more erect and the bractlets nearly equalling the acute sepals. The species grows on the plains and the foot hills of the Rockies, but generally in richer soil than *P. effusa*. It extends from New Mexico and Arizona to Minnesota and Saskatchewan.

POTENTILLA HIPPIANA PROPINQUA n. n.

Potentilla diffusa A. Gray, Mem. Am. Acad. 1849: 41. 1849. Not Willd.

Potentilla Hippiana pulcherrima S. Wats. Proc. Am. Acad. 555, in part, 1873. Not *P. pulcherrima* Lehm.

The stem is more diffuse or ascending, rather low; the leaflets are more approximate and more silky, scarcely at all tomentose, often green above. In the latter case they resemble somewhat those of *P. pulcherrima*, which is a much taller plant.

POTENTILLA AMBIGENS Greene, Erythea, 1: 4. 1893.

It is strange that this very marked species should not have been described before 1893. It was collected by Hall and Harbour in 1862, Wm. A. Bell in 1867 and Geo. Vasey in 1881. The first specimens were included by Dr. Gray in *P. Hippiana*. On the label of Bell's specimens is written: "Durand suggests *P. rivularis*. Gray says no!—perhaps *P. campestris*." One of Dr. Vasey's specimens is labeled *Potentilla Thurberi*, by whom I do not know.

P. ambigens is the tallest of the group, 6-7 dm. high, rather sparingly grayish silky. The leaflets are 3-4 cm. long, coarsely serrate and more or less decurrent on the rachis. The following specimens have been examined:

Colorado: Hall & Harbour, nos. 158 and 162, 1862 (both only in part); E. L. Greene.

New Mexico: Wm. A. Bell (Ratan Mountains), 1867; G. R. Vasey (Las Vegas), 1867.

POTENTILLA LEMMONI (Wats.) Greene, *Pittonia*, 1: 104, 1887.

Ivesia Lemmoni Wats. *Proc. Am. Acad.* 20: 365. 1885.

This species should, I think, be placed as an appendix to this group. It has no relationship to any of the *Ivesias*, and is a true *Potentilla* in every respect, except as to the number of pistils, which are only half a dozen or so. Its nearest relative is, without doubt, *Potentilla crinita*, from which it differs by the longer, narrower and fewer leaflets, the sparser pubescence, the few pistils and the longer hairs on the receptacle.

Graciles. This group is the most difficult in the whole genus. It contains so many and perplexing forms, that I have not yet come to any definite conclusion as to how to treat it. Watson united all except the first (partly) and the last into one species. This is far from satisfactory. It would have been much more logical to make *P. effusa* a variety of *P. Hippiana*, *P. Breweri* one of *P. Plattensis*, or *P. emarginata* one of *P. fragiformis* than to include *P. Nuttallii* and *P. flabelliformis* in *P. gracilis*. The group contains not less than ten well marked American forms and about half a dozen less marked ones. Of these ten forms all except one have been recognized at one time or another as species or varieties, and as far as I know, all but two have received names. I shall temporarily regard these ten as species.

This view I dare to express, as I have had chance to study this group especially in the field. I have collected the following myself: *P. pulcherrima*, *Blaschkeana*, *flabelliformis*, var. *ctenophora*, *fastigiata*, *etomentosa* and *Nuttallii*. I have seen the following growing together: *pulcherrima* and *Nuttallii*, *Blaschkeana* and *Nuttallii*, *Blaschkeana* and *flabelliformis*, *Blaschkeana* and *ctenophora*, *flabelliformis* and *Nuttallii*. In no case have I found intermediate forms. In the herbaria that I have looked over I have found one specimen between *Blaschkeana* and *ctenophora*, a few between *Nuttallii* and *Blaschkeana* or *fastigiata*, etc., but as a rule they can be distinguished fairly well.

POTENTILLA PULCHERRIMA Lehm. Stirp. Pug. 2 : 10. 1830.

Potentilla Hippiana pulcherrima Wats. Proc. Am. Acad. 7 : 555.
(in part) 1873.

As originally described, *P. pulcherrima* Lehm. has pinnate leaves with approximate leaflets. This was undoubtedly the reason why Watson united it with *P. diffusa* Gray. As far as I know, that plant is low, ascending, and rather silky and in all respects nearest related to *P. Hippiana* (see above), while *P. pulcherrima* is tall, upright, with slender erect branches and nearest related to *P. gracilis* and *P. fastigiata*. Watson, during King's expedition, observed the fact that *P. pulcherrima* had not always pinnate leaves, which, in fact, is rather seldom the case, and consequently included in *P. Hippiana pulcherrima* also a form with digitate leaves. The only character left to distinguish forms of *P. Hippiana* and those of *P. gracilis* was the number of carpels, in the former 10-30, in the latter 40. Unfortunately the number varies even in the same individual, and therefore many specimens labelled *P. gracilis* belong to *P. pulcherrima*. My own from the Black Hills, I unfortunately labeled thus. *P. pulcherrima* differs from the other members of the group by its leaflets, which are obovate or oblanceolate, mostly obtuse, crenate, silky and green above, densely white-tomentose beneath. It grows in the mountains and foot hills from New Mexico and Nevada to Saskatchewan. No specimens have been seen from the Pacific Slope.

POTENTILLA GRACILIS Dougl.; Hook. Bot. Mag. *pl.* 2984. 1829.

The true *P. gracilis* is a very rare plant and confined to the northern Pacific Coast. What has gone under this name is either the preceding or the next following species. It differs from both in the narrow leaflets, which are oblanceolate, acute, and coarsely toothed with triangular teeth of the same form as in *P. recta*. The leaves are only slightly silky above and finely tomentose beneath, and the branches of the cyme are very slender and erect. The following specimens have been examined :

Oregon : Douglas ; Tolmie, 1851 ; E. Hall, no. 136, 1871.
Washington : Dr. Ruhn ; Wilke's Expedition, no. 141. *Vancouver Island* : John Macoun, no. 182, 1893. *Kodiak Island* : (Collector not given).

POTENTILLA BLASCHKEANA Turcz; Lehm. in Otto, Gart. & Blumenz. 9: 506. 1853.

Potentilla gracilis most authors, not Dougl.

This differs from *P. gracilis* in stouter habit, ascending branches, larger flowers and broader leaflets, which are obovate, deeply toothed or cleft into ovate or oblong teeth, silky and green above, silky and tomentose beneath. It must be admitted that this species is near to the preceding. It was merged therein by Watson, but it is evidently not so near *P. gracilis* as is *P. pulcherrima*, which differ only in the form of the teeth.

P. Blaschkeana is common from California to Wyoming and northward as far as Kodiak, off Alaska.

POTENTILLA CANDIDA n. sp.

Potentilla gracilis var. Wats. King's Exp. 5: 88. 1871.

Stem low, 1–2 dm. high, densely white silky-strigose; stipules ovate, entire, nearly 1 cm. long; leaves on rather short petioles, densely silvery silky on both sides, digitate; leaflets 7–9, obovate in outline, 2–4 cm. long, rather thick, deeply incised or cleft into large oblong teeth; cyme rather dense; flowers about 1 cm. in diameter; calyx white-silky; bractlets lanceolate, much shorter than the ovate sepals; petals yellow, obcordate, a little exceeding the sepals. (Plate 287.)

It resembles most a depauperate *P. Blaschkeana*, and differs mainly in the pubescence which is very dense on both sides of the leaves, and silky; tomentum none.

Nevada: S. Watson, no. 337, 1868 (type). *Montana*: F. V. Hayden, 1860. *Wyoming*: T. C. Porter, 1873.

POTENTILLA FLABELLIFORMIS Lehm. Stirp. Pug. 2: 12. 1830.

Potentilla gracilis flabelliformis Nutt.; Torr & Gray, Fl. N. Am. 1: 440. 1840.

This stands nearest to *P. Blaschkeana*, but I think it is without doubt a good species. I have had the opportunity to watch the two in the field and found them often grow together, but never found an intermediate form, and in all the collections that have gone through my hands there are only the specimens from one locality, where I am in doubt to which species to refer them, and these may be hybrids. *P. flabelliformis* differs from the related species

in the leaves, which are divided to near the base into linear segments. They are also white-tomentose beneath and densely silky above. There are two forms of this species; the one with narrow linear more or less revolute lobes and smaller flowers resembles Lehmann's figure in Hooker's Fl. Bor. Am., and is therefore taken as the type. The other somewhat approaches *P. Blaschkeana* in the general habit and the size of the flowers, and may be known under the name:

POTENTILLA FLABELLIFORMIS CTENOPHORA n. v.

Stem stout; leaflets less deeply divided into somewhat broader divisions, which are not at all revolute. Corolla over 15 mm. in diameter, petals broadly obcordate, much longer than the sepals.

Both forms are fairly common from Wyoming and California to British Columbia and Saskatchewan.

POTENTILLA FASTIGIATA Nutt.; Torr. & Gray, Fl. N. Am. 1: 440. 1840.

Potentilla gracilis fastigiata Wats. Proc. Am. Acad. 7: 557. 1873.

This perhaps comes nearest to *P. pulcherrima*, resembling it in the form of the leaflets and the size of the flower, but it is a smaller plant, less than 3 dm. high and with a rather crowded cyme. The pubescence of the leaves is also different, long, silky and with very little tomentum beneath. It is a rather rare plant, extending from Wyoming and California to British Columbia and Saskatchewan.

POTENTILLA PECTINISECTA n. sp.

Stem slender, 3-4 dm. high, ascending, finely strigose or hirsute; stipules ovate, often toothed; leaves on slender petioles, digitate, of 5-8 leaflets, appressed-silky on both sides and sometimes slightly tomentulose beneath; leaflets obovate, deeply pectinately divided into oblong or linear segments; cyme rather dense; calyx appressed-silky; bractlets linear-lanceolate, shorter than the broadly lanceolate sepals; petals yellow, obcordate, scarcely exceeding the sepals.

It has gone under the names of *P. gracilis flabelliformis* and *fastigiata*. It resembles *P. fastigiata* in general habit and pubescence, but is more slender. The form of the leaflets is most like that of *P. Blaschkeana* and *P. Nuttallii*, and sometimes that of *P.*

flabelliformis, but the plant is more delicate and the pubescence is silky and rather scant. Specimens:

Arizona: E. Palmer, no. 145, 1877. *Wyoming*: C. E. Sheldon, no. 72, 1884; Fremont, 2d exp. *Montana*: Robert Adams, 1871. *Utah*: L. F. Ward, no. 119, 1875; M. E. Jones, no. 5554d and 35544, 1894; no. 765, 1880; Mrs. Thompson, no. 195, 1873.

POTENTILLA ETOMENTOSA n. sp.

Potentilla rigida Newberry, Pac. R. R. Rep. 6: Part 3. 72. Not Nutt.

Potentilla gracilis rigida Coville, Cont. U. S. Nat. Herb. 4: 96. 1893.

Stem 4–5 dm. high, slightly hairy, erect, from a stout caudex; stipules ovate, lanceolate, entire; leaves on long petioles, digitate, of about 7 leaflets, glabrate above, slightly silky-strigose beneath but without any trace of tomentum; leaflets obovate, 3–5 cm. long, crenate or serrate with ovate teeth; calyx hirsute; bractlets oblong, a little shorter than the ovate pointed sepals; petals obcordate, scarcely exceeding the sepals.

This resembles mostly *P. pulcherrima* but is perfectly without tomentum and only slightly hairy. It resembles *P. Nuttallii* only in the lack of tomentum. It has the crenate, obovate leaves of *P. pulcherrima*, and if not held distinct must be regarded as a variety thereof. The distribution is quite different, *P. pulcherrima* not having been collected in California. The following are the specimens seen:

California: Fremont, no. 162, 1846 (Type); J. S. Newberry (Williamson Expedition); Munson & Hopkins, 1889; Coville & Funston, no. 1399, 1891.

POTENTILLA NUTTALLII Lehm. Ind. Sem. Hort. Bot. Hamb. 1852: 12. 1852.

Potentilla recta Nutt. Gen. 1: 310. 1818. Not L.

Potentilla rigida Nutt. Journ. Acad. Phila. 7: 20. 1834. Not Wall.

Potentilla gracilis rigida Wats. Proc. Am. Acad. 7: 557. 1873.

The general habit of this species resembles that of *P. Blaschkeana*, but the plant is green, without tomentum and coarsely hirsute. The distribution is from Colorado to California, British Columbia and Saskatchewan.

POTENTILLA RECTA L. Sp. Pl. 497. 1753.

It somewhat resembles *P. Nuttallii* in pubescence and general habit, but differs in being paler and in its large pale yellow petals. It is of European origin and occurs sparingly in the Eastern States to the District of Columbia and to Ohio.

The *Argenteae* resemble in general habit the preceding group. The plants are very leafy, the leaflets generally 5 or those of the upper leaves only 3, the flowers many and small, and the petals scarcely exceed the sepals. The group is European, only *P. argentea* being also a native of North America.

POTENTILLA INTERMEDIA L. Mant. 1: 76. 1767.

This species very much resembles *P. Monspelienensis*, especially var. *Norvegica*, and has in this country been mistaken for it. It differs mainly in the mostly 5-foliolate leaves, the perennial root and the style. The species is sparingly introduced in the East. Some of the specimens are :

New Jersey and *New York* : Addison Brown, 1881 and 1880.

POTENTILLA INCLINATA Vill. Hist. Pl. Delph. 3 : 567. 1789.

P. canescens Besser, Prim. Fl. Galic. 1 : 330. 1809.

It much resembles the preceding species, but differs in a more slender and simple stem and the grayish pubescence. The only specimens collected on this continent that I have seen are those collected in Ontario by Fowler.

POTENTILLA ARGENTEA L. Sp. Pl., 497. 1753.

P. argentea is one of the easiest to identify, by its small flowers, deeply dissected leaves, which are white-tomentose, especially beneath, and have revolute margins. It is a native of Europe and Asia, as well as of America. In this country it extends from Nova Scotia and the District of Columbia to Dakota and Kansas.

POTENTILLA COLLINA Wibel, Prim. Fl. Werth., 267. 1799.

This is another species that has been collected in the country at least once, viz., by J. M. Holzinger (no. 30) at Winona, Minn., in 1887. It differs from *P. argentea*, which it most resembles, by its prostrate or spreading habit, less white-tomentose leaves, which have broader lobes, and flat, not revolute margins.

The *Tormentillae* are a small group, characterized by the more or less spreading, prostrate or creeping stem and long-pedicelled, axillary flowers. The original *Tormentillae* have 4-merous flowers, but sometimes, however, they are 5-merous, and other species that have regularly 5-merous flowers have no other character which would warrant the division into two groups, much less into two genera. The group is mainly European, only one species being a native of North America, viz.:

POTENTILLA CANADENSIS L. Sp. Pl. 498. 1753.

It is a very variable plant, and several species have been proposed. What I take as the original *P. Canadensis* is a less luxuriant form of what has generally been known as *P. Canadensis simplex* (Michx.) T. & G. (*P. simplex* Michx.), not that small, simple, more hairy form, only a few inches high, that grows in poor dry soil, which is

POTENTILLA CANADENSIS PUMILA (Poir.) T. & G. Fl. N. Am. 1 : 443. 1840.

Potentilla pumila Poir. in Lam. Enc. Meth. 5 : 594. 1804.

P. Canadensis is common from Maine and North Carolina to Indian Territory and Minnesota. I have seen one specimen collected in Nevada, but this was undoubtedly introduced. The variety has about the same range, but is rarer.

POTENTILLA REPTANS L. Sp. Pl. 499. 1753.

This European species has been collected by Martindale in 1876 on ballast in New Jersey. It differs from *P. Canadensis* in the creeping and rooting stem, smaller leaves and large, ovate or elliptical bractlets, which exceed the sepals.

POTENTILLA NEMORALIS Nestler, Mon. Pot. 28 and 65. 1816.

Tormentilla reptans L. Sp. Pl. 500. 1753. Not *Potentilla reptans* L.

Also a European species which has been collected in Labrador. It differs from *P. Canadensis* in the 4-merous flowers and in the leaves, which are all, except the basal ones, ternate.

Haematochri. The dark purple- or dark red-flowered species of *Potentilla* constitute a very natural group, which consist of the

Mexican species: *P. Ehrenbergiana*, *Haematochrus*, *fusca*, and *comarioides*, a few Indian species, as for instance *P. Nepalensis* and *P. atrosanguinea*, and two species of the Southwestern United States, viz.:

POTENTILLA THURBERI A. Gray, Mem. Am. Acad. (II.) 5: 318.
1854.

As described by Gray and Lehmann, *P. Thurberi* should be perfectly green and only slightly hairy. Such specimens have been collected as follows:

New Mexico: Thurber, no. 1107, 1851; Dr. Henry, 1854; Dr. Bigelow (Mex. Bound. Surv.), no. 347, 1851; E. L. Greene, 1880; E. Palmer, 1869. *Arizona*: Lemmon, 1881; C. G. Pringle, 1884; Wooton, 1895.

More than half of the specimens in our collections that are labelled *P. Thurberi* do not agree with the original description, and I take them to represent an undescribed species:

POTENTILLA ATRORUBENS.

Potentilla Thurberi Rothrock, Wheeler Surv. 4: 113. (mainly.)
1878.

Stem 4-7 dm. high, finely pubescent and with scattered long villous spreading or reflexed hairs; stipules ovate or lanceolate, 1-2 cm. long, often toothed; basal and lower stem-leaves long-petioled, digitately 5-7-foliolate, glabrous or slightly silky above, silky and white-tomentose beneath; leaflets obovate to oblanceolate, coarsely serrate; stem-leaves sessile, 3-5-foliolate; cyme open and branched; flowers about 15 mm. in diameter; calyx silky-villous and finely pubescent, about 1 cm. in diameter; bractlets lanceolate, often equalling the lanceolate-triangular, more or less acuminate sepals; petals dark reddish purple, very broadly obcordate, exceeding the sepals; stamens 20. (Plate 288.)

This species much resembles *P. Thurberi*, from which it has not been distinguished. It differs, however, in several characters that seem to be fairly constant, viz., the tomentum on the lower surface of the leaves, the much sharper dentation, the long silky spreading or reflexed hairs of the stem and calyx, and generally more acuminate sepals. From the Mexican *P. fusca* and *P. comarioides* it differs in the leaflets, which are serrate to the very base. It seems to be more common than *P. Thurberi* and has about the same range.

Arizona: Rothrock, no. 399, 1874; C. G. Pringle, no. 305, 1881; 1884; no. 1,578, 1887; M. E. Jones, 1884; J. G. Lemmon,

no. 2699, 1882; 1892; E. A. Mearns, no. 50, 1887; T. E. Wilcox. 1893. *New Mexico*: H. H. Rusby, no. 128, 1881.

The *Argentinæ* are a natural group, perhaps worth generic rank. The plant is propagated by true runners as in *Fragaria*. The style is lateral as in that genus and the achene large with thick corky shell. These characters are not found in any other species of *Potentilla*, at least not in America. All the species belonging here have pinnate leaves more or less white silky, at least beneath. The species of the group are *P. anserinoides* of New Zealand and the following:

POTENTILLA ANSERINA L. Sp. Pl. 495. 1753.

This well known species is found in the colder part of the north temperate and the arctic zones of both hemispheres, extending in North America as far south as New Jersey and Nebraska, and in the mountains to New Mexico. The following varieties may be distinguished:

POTENTILLA ANSERINA GRANDIS Torr & Gray, Fl. N. Am. 1: 444. 1840.

A luxuriant form growing among grass, with larger, erect or ascending leaves, sometimes one foot long. It is common on the Pacific coast from California to Alaska, but also collected in Montana, Newfoundland and Greenland.

POTENTILLA ANSERINA CONCOLOR Ser. in DC. Prod. 2: 582. 1825.

It differs from the species in the leaves, which are silky white on both the upper and lower surfaces. In America it is confined to the Rocky Mountain Region from Mackenzie River to New Mexico, California and Alaska.

POTENTILLA EGEDII Wormsk. Fl. Dan. 9: fasc. 27. 5.

Potentilla Anserina Egedii Torr. & Gray, Fl. N. Am. 1: 444. 1840.

Potentilla Anserina Groenlandica Tratt. Ros. Mon. 4: no. 13. 1824.

I think that this is a good species, differing from *P. Anserina* in the delicate habit, the deeper and more open incisions of the leaflets and the scant pubescence. In the specimens examined by me the achenes were also different in shape. In *P. Egedii* they were

decidedly lenticular, while in *P. Anserina* the upper end is thicker and rounded-triangular in cross-section.

P. Egedii is an arctic species, found from Greenland to Alaska, and extending southward on the coasts to Maine and Oregon.

The *Fruticosae* differ from the other groups of North American *Potentillae* in the following respects: The style is lateral, ovule ascending, achene hairy and the plant more or less shrubby. The American species are:

POTENTILLA FRUTICOSA L. Sp. Pl. 495. 1753.

This is a native of the north temperate zone, extending in America from Labrador to Alaska south to New Jersey and Colorado. In mountain regions the leaflets are narrower with revolute margins, and this form represents *P. floribunda* Pursh, *P. fruticosa tenuifolia* Lehm. The extreme is reached by the form collected by Watson during the King's expedition and described as *P. fruticosa parvifolia* Wats. It has nearly linear leaflets and smaller long-pedicelled flowers.

POTENTILLA TRIDENTATA Soland.; Ait. Hort. Kew. 2: 216. 1789.

P. retusa Retz. is generally cited as a synonym of *P. tridentata* and is much older, but *P. retusa* is described as having yellow flowers, and in the figure of it in Flora Danica the petals are also yellow, while in *P. tridentata*, as is well known, they are white. If made from a specimen of *P. tridentata* it is, indeed, a very poor one, as it resembles *Sibbaldia procumbens* more than *P. tridentata*. It can, however, not represent that species, as the petals exceed the sepals. What *P. retusa* was, or is, is still a secret.

P. tridentata extends from Greenland to the mountains of North Carolina and westward to Minnesota.

Biflorae. This contains only one species, placed by Lehmann with *P. fruticosa*, *P. tridentata* and their allies. The style is, however, nearly terminal, and the achenes not hairy. It resembles the *Fruticosae* in the thickish leaves, whose margins are entire, and the non-emarginate petals. The receptacle has also very long hairs.

POTENTILLA BIFLORA Willd.; Schlecht. Mag. Gesel. Nat. Fr. Berlin, 7: 297. 1813.

It is a native of northeastern Asia, Alaska and the arctic coast of North America, but a rather rare plant.